are endowed to resist the severities of the basin climate. Deep rooted in the volcanic ashes of yonder bench glows *Opuntia pulchella*, the prettiest of the *Cacti* family, and that odd little stiff-leaved, crimson *Oxytheca perfoliata*. Under the spiny bushes of *Bigelovia graveolens* carpeting the whole valley, are seen a few plants of *Pectocarrya penicillata* strayed away from the coast, and *Blitum carinatum*, only found before in Australia.

RECENT PUBLICATIONS.—*American Journal of Science and Arts*, January Dr. Gray gives a review of Darwin's late work on "The Different Forms of Flowers on Plants of the same Species." This paper came to hand most aptly just as we had finished reading the book. Dr. Gray, of course, does not mention that the work was dedicated to him, but so it is, and we are glad of it, for it is a deserved compliment. It was refreshing to see all through the book the notice that was taken of American botanists, for it is a sign that they are not all completely absored in Systematic Botany, which, in a country comparatively new, very justly has a controlling interest, but are beginning to study life histories. Dr. Gray adds another genus and natural order to the list of cleistogamous flowers. Mr. C. G. Pringle, of Charlotte, Vermont, has found excellent examples of cleistogamous flowers in *Dalibarda repens*, of the order *Rosaceæ*. Mr. Pringle also announces the discovery of cleistogamous flowers regularly occurring within the leaf-sheaths of *Danthonia spicata* and its allies, also in *Vilfa* and other grasses. Mr. Darwin adopts Hildebrand's term of *heterostyled*, instead of *heterogone* or *heterogonous* suggested by Dr. Gray. The first six chapters "relate to di-morphous blossoms, such as those of Primrose and *Houstonia*, including also the trimorphic cases, as of *Lythrum Salicaria* and some species of *Oxalis*. The seventh chapter discusses Polygamous, Diœcious, and Gyno-Diœcious Plants; the eighth and closing chapter is devoted to Cleistogamous Flowers."

*American Naturalist*, January.—The botanical notes are "Notes on the Alpine Flora of Mt. Shasta," and "Production of Apples in 'off' Years," both by Dr. A. S. Packard. The Naturalist comes for the first time from Phildelphia, from the press of McCalla & Staveley. The press work is as fine if not finer than ever, and under the editorial management of Dr. A. S. Packard, Jr., and Prof. E. D. Cope, it promises to its patrons everything needed in a journal devoted to Natural Sciences. In looking over the different departments, we see them all in the hands of specialists except Botany. It is hard, even for a journal devoted to natural sciences in their widest sense, not to become special in its tendency. It would require wonderful skill and selt-denial for two such eminet Zoologists as Dr. Packard and Prof. Cope not to throw the weight of their favor on the side of Zoology. We are not decrying Zoology, for next to Botany it has a warmer place in our affections than anything else, but we are asking for a fair representation.

*Bulletin of the Torrey Botanical Club*, November, December and January.—The November number is filled by a contribution from Francis Wolle. He gives a list of Fresh Water Algæ, the work of the past twelve months. It contains 150 forms new to the United States and 24 new to science. Two new genera also are described. In the December No. a new species of *Danthonia* is described by C. F. Austin, and named for its discoverer, *D. Faxoni*. The species is allied to *D. spicata*, and was found at the Notch of the White Mts., N. H. Mr. Davenport describes a new *Cheilanthes* found in California, and names it *C. viscida*. The species seems intermediate between *C. vestita* and *C. Cooperæ* and will be figured in an early number of the "Illustrations of the Ferns of North America." In the January number we note Mr. Geo. E. Davenport's valuable contriution on "Vernation in Botrychia, with special reference to its importance as a means for distinguishing the different species." The different species of *Botrychium* have so long been puzzles to botanists that Mr. Davenport has tried to

establish them upon characters that would be unmistakable and invariable. He has found these characters in the buds and spores. As the characters depending on the spores can be determined only by very high microscopical power, in the present paper he describes the buds. An accompanying plate, with figures drawn by M J. H. Emerton, renders the descriptions very plain and easy to follow. With this number the Bulletin began its ninth year of publication, and we wish it long life and success. It consists of four or more pages monthly. The price is one dollar per annum, in advance. Address Wm. A. Leggett, 54 East 81st Street, N. Y. City.

*Science Observer*, January.—This journal is printed at Boston by the Boston Amateur Society. Its subscription price is fifty cents per annum. It consists of eight pages and a cover. Address Science Observer, Box 2,725, Boston.

*The Gardener's Monthly*, January.—We are always at a loss what to note in this journal. It is so full of facts, that to select one would seem to slight others. Of course the part pertaining strictly to gardeners we can legitimately pass over, as it does not belong to our province. But botanists too, have a corner, and a good large one, for Mr. Thos. Meehan is a scientific botanist as his frequent contributions to the Proceedings of the Phila. Acad. of Nat. Sci., will show.

*The Valley Naturalist*, January.—The first number of this monthly is before us. It is published at St. Louis, Mo., by Henry Skaer, 1,213 South 6th St. The subscription price is fifty cents per annum, and its object is to aid the diffusion of natural science in a popular form. The present number has its departments of Entomology, Botany, Ornithology and Conchology well represented.

*Botanical Index*, January.—Published by L. B. Case at Richmond, Ind. With the number before us the Index begins its second year of existence. It contains 12 pages or more of matter devoted to Floriculture and Horticulture. It is well illustrated and certainly deserves the patronage of all amateur gardeners or florists. The subscription price of the Index is 50 cents per year.

*Silurian Plants*, by Leo Lesquereux.—Read before the American Phil. Soc., Oct. 19, 1877. The author describes in this paper five new species of land plants recently discovered in the Silurian rocks of the United States, one of them belonging to a new genus. "The discovery, an important one for the Natural History of this country, was recorded in the Am. Jour. of Science and Arts, Jan. 1874, p. 31, and the remains, representing two fragments of stems and branches, were briefly described at the same time." Now for the first time the plants are fully described. A branch of a fern has been recently obtained from the Silurian Schists or Slates of Angers, France, but this important discovery of land plants in the Silurian was forestalled in America. "It is a remarkable fact that the character of these Silurian plants gives us a microcosmical representation of the flora of the Carboniferons, so simple and at the same time so admirable in the multiple sub-divisions of its specific forms." We now have represented in the Silurian the *Lycopodiaceæ*; the Ferns; the *Calamariæ*, representing Cryptogamous acrogens like the ferns; the *Sigillariæ*, or representatives of the Phænogamous gymnosperm. "When *Cordaites* (now considered Conifers) are found in Silurian beds (a probable discovery, for they have been found abundant in the Devonian,) we shall have all the essential types of the plants of the Carboniferous flora already represented in the oldest paleozoic times." Mr. Lesquereux also describes a fungus found in the shales of the Darlington Coal bed at Cannelton, Penn "This discovery" the author remarks, "is not less remarkable than that of land plants in the Silurian."